CURRICULUM FOUNDATION SERIES

Numbers We See

by Maurice L. Hartung

Henry Van Engen, Anita Riess,

Catharine Mahoney

and A. B. Evenson

ILLUSTRATED BY JULIA KOLB

W. J. Gage Limited

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THIS IS THE FIRST BOOK OF THE BASIC MATHEMATICS PROGRAM, WHICH IS A UNIT OF THE CURRICULUM FOUNDATION SERIES.

THE AUTHORS OF THIS BOOK ARE

MAURICE L. HARTUNG, PROFESSOR OF EDUCATION, UNIVERSITY OF CHICAGO;

HENRY VAN ENGEN, PROFESSOR OF EDUCATION AND MATHEMATICS, UNIVERSITY OF WISCONSIN;

ANITA RIESS, ASSOCIATE PROFESSOR OF PSYCHOLOGY, UNIVERSITY OF BRIDGEPORT, BRIDGEPORT, CONNECTICUT;

CATHARINE MAHONEY, FORMERLY A PRIMARY TEACHER IN THE DAVENPORT (IOWA) PUBLIC SCHOOLS;

AND A. B. EVENSON, GENERAL SUPERVISOR, SENIOR HIGH SCHOOLS, EDMONTON PUBLIC SCHOOL BOARD.

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FOR INFORMATION ABOUT THE USE OF THIS BOOK AND A SUMMARY OF THE CONTENTS SEE PAGES 71 AND 72.

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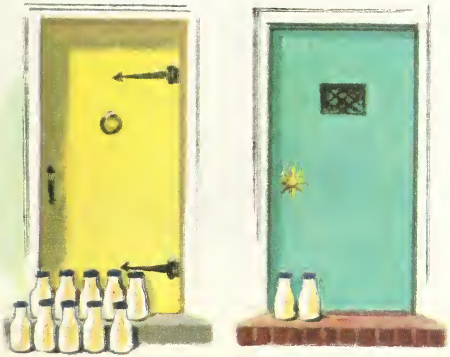


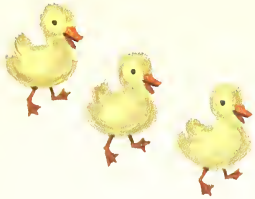









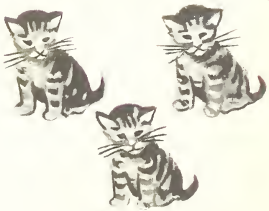



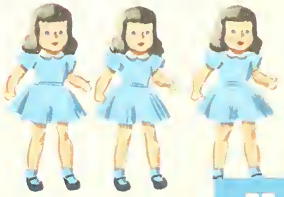


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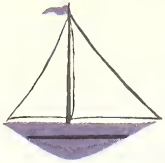
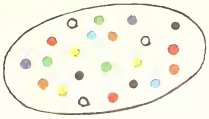











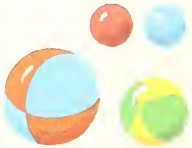









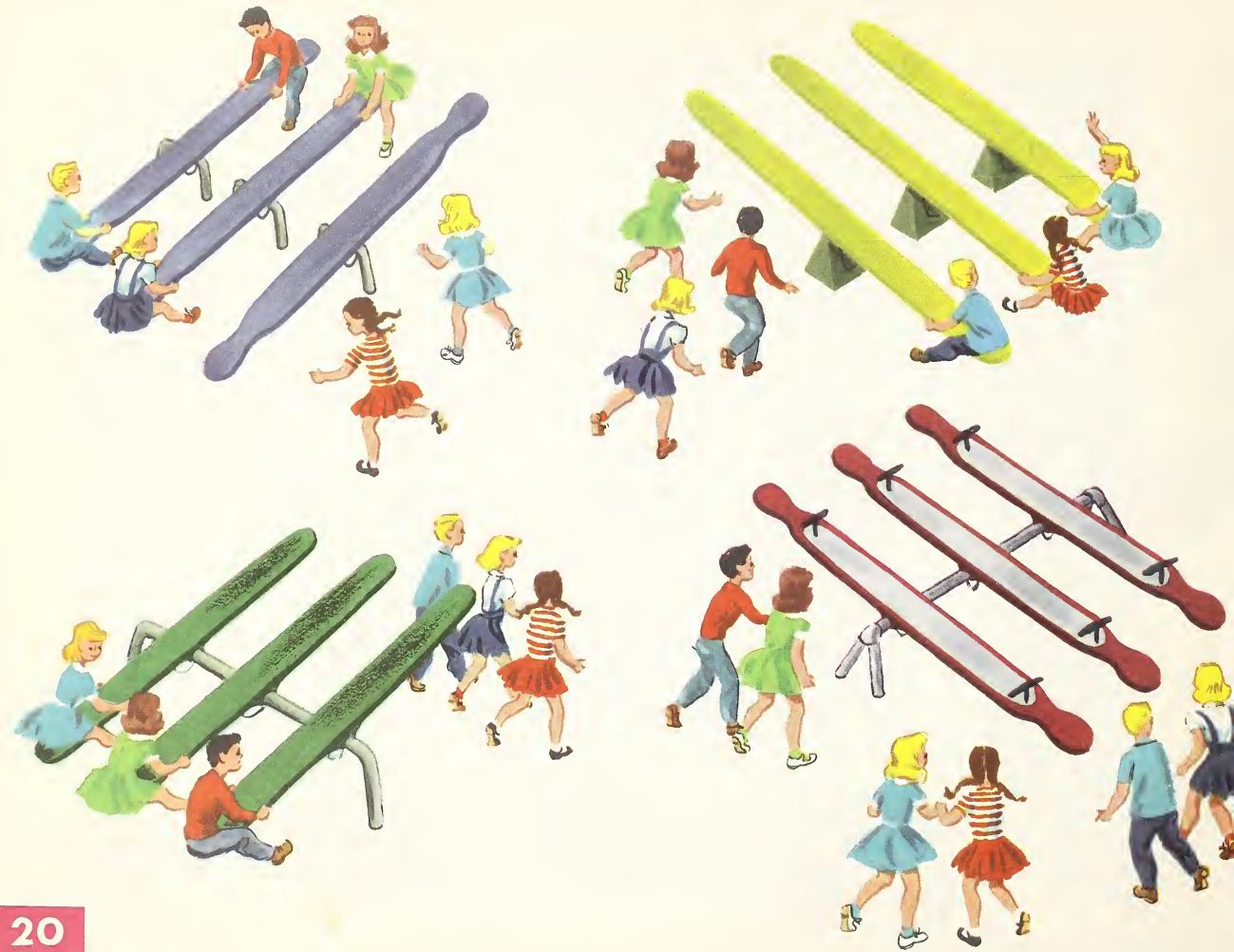

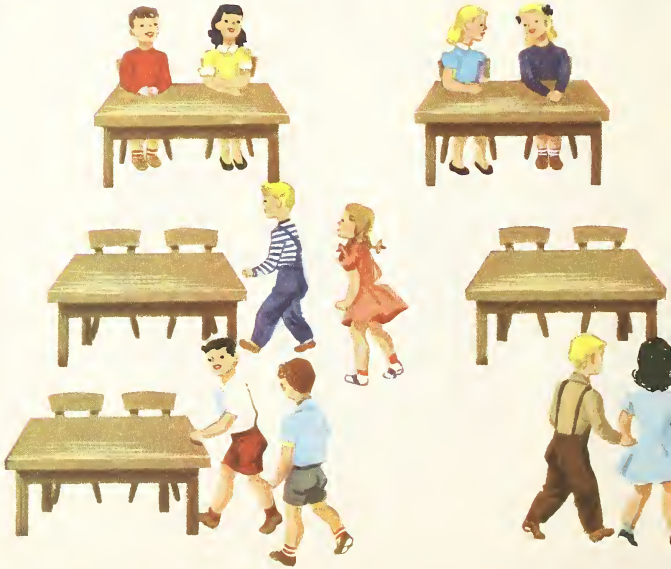

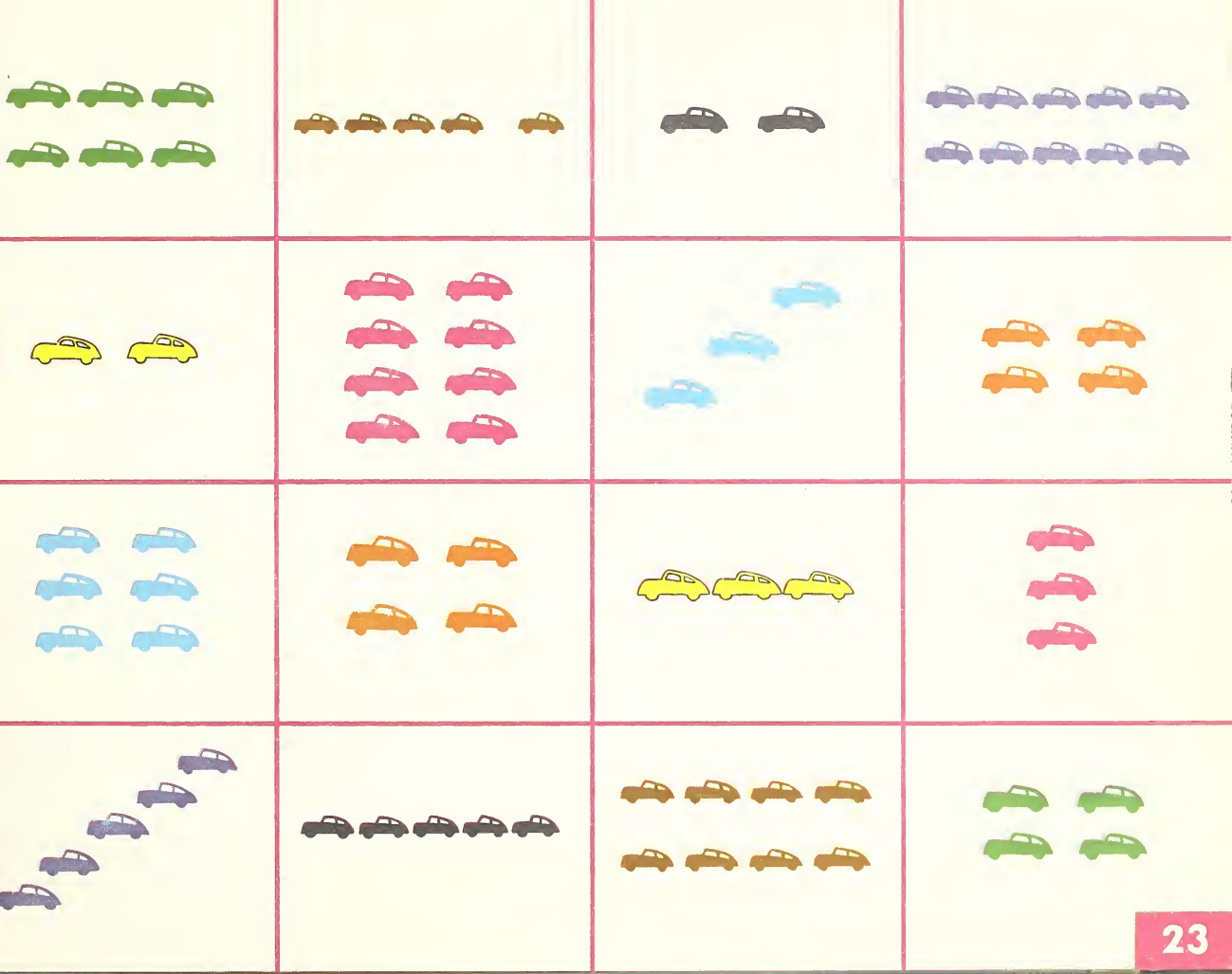

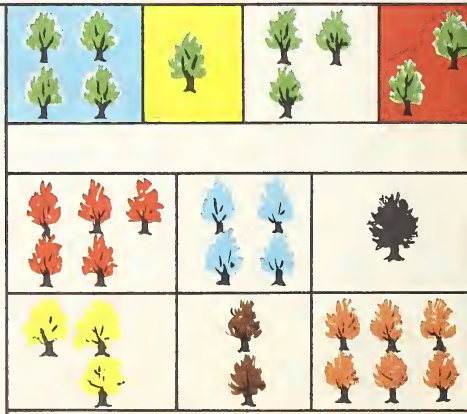

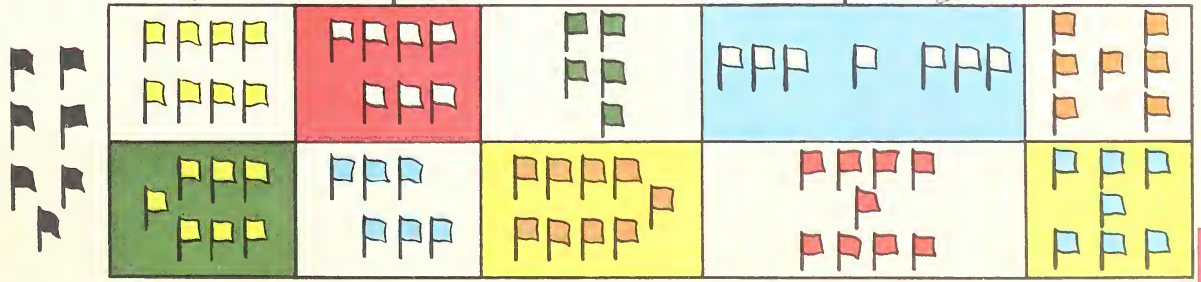

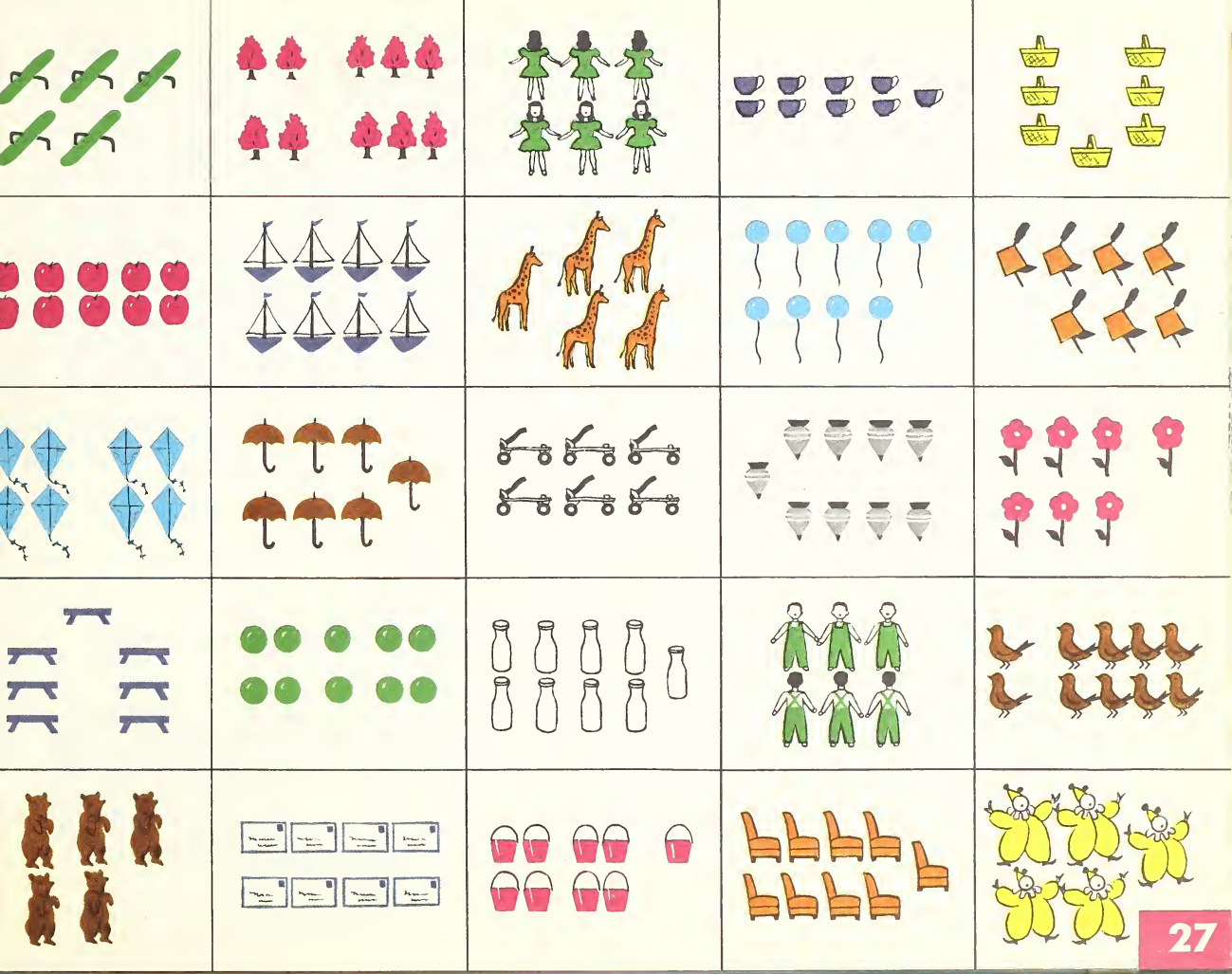


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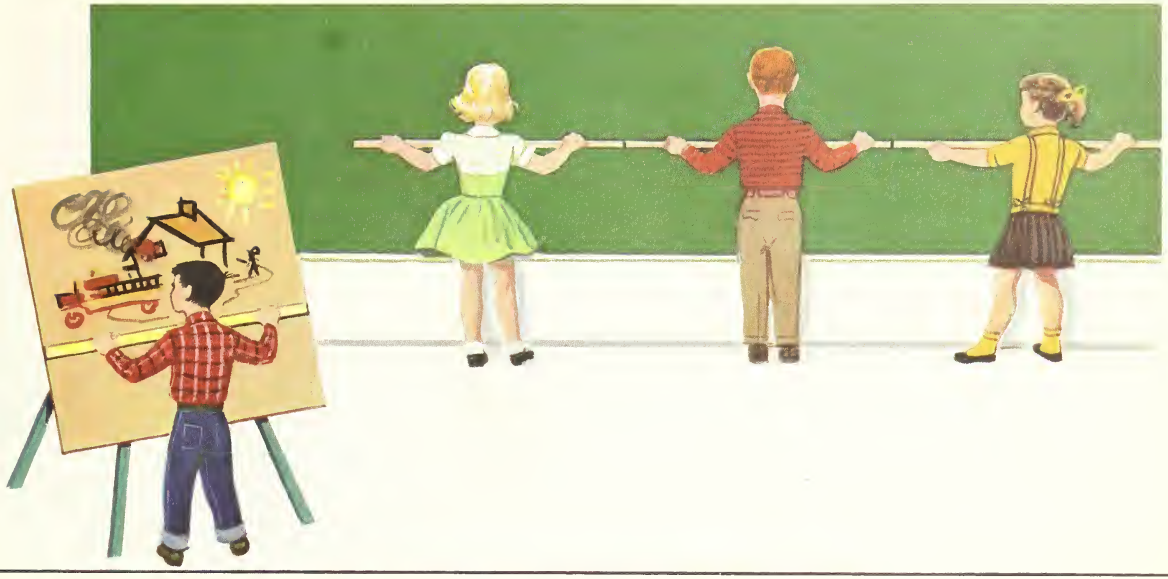

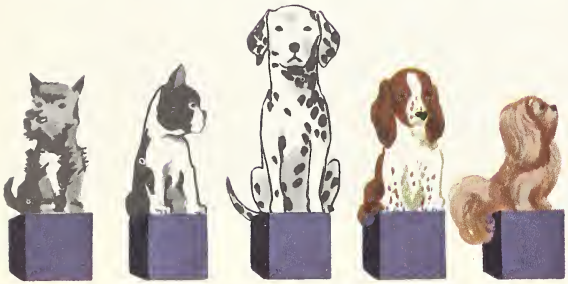

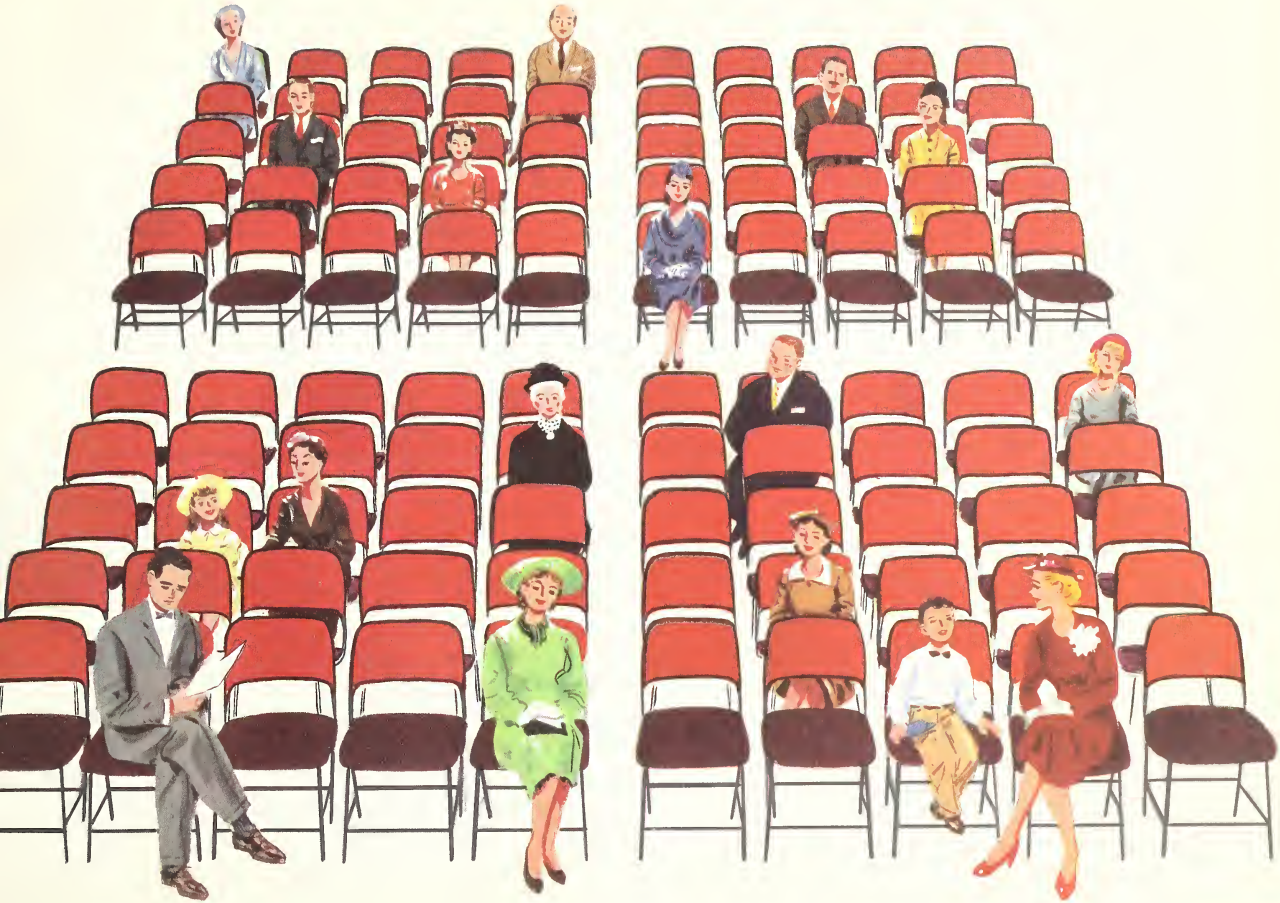

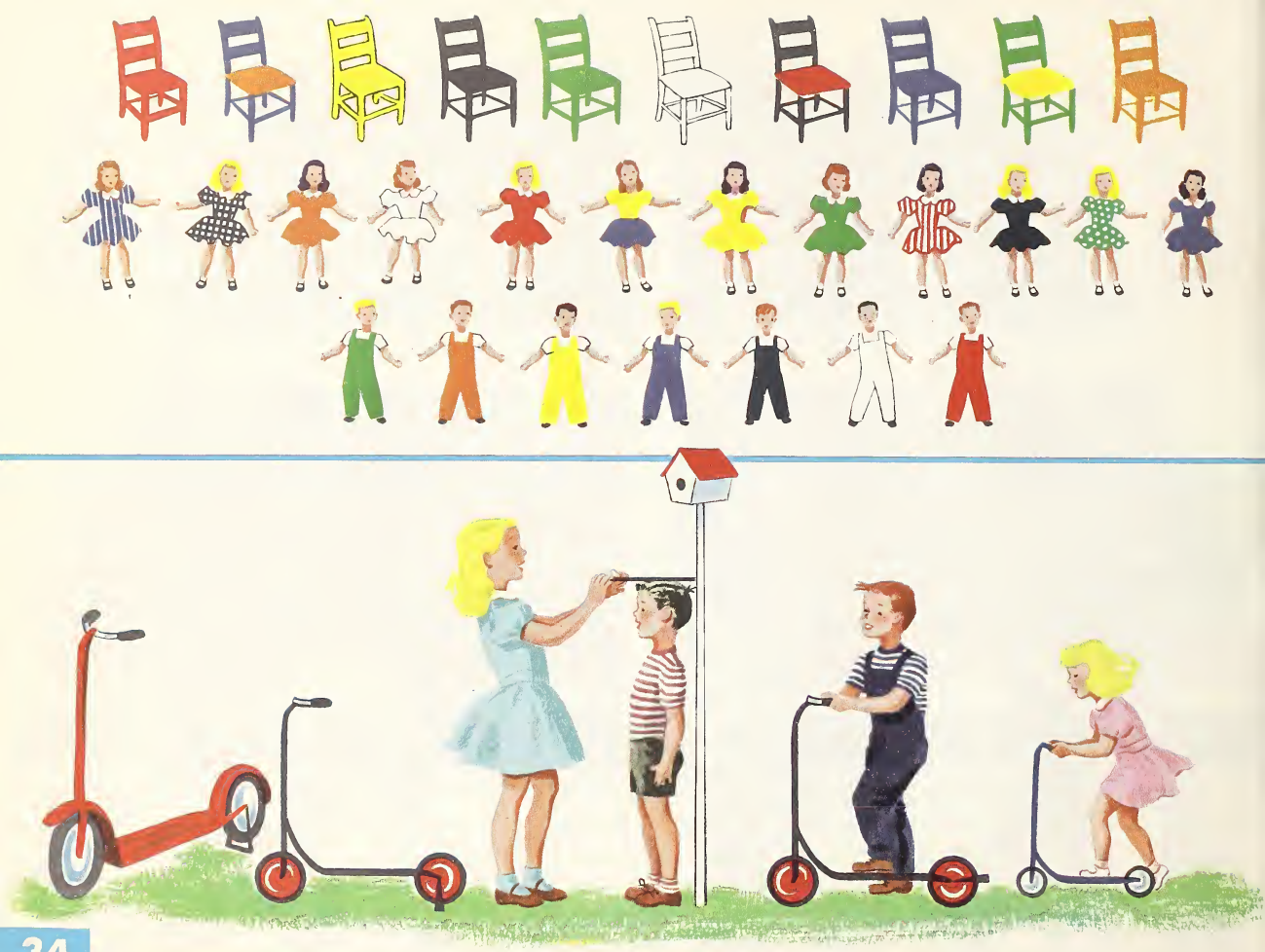

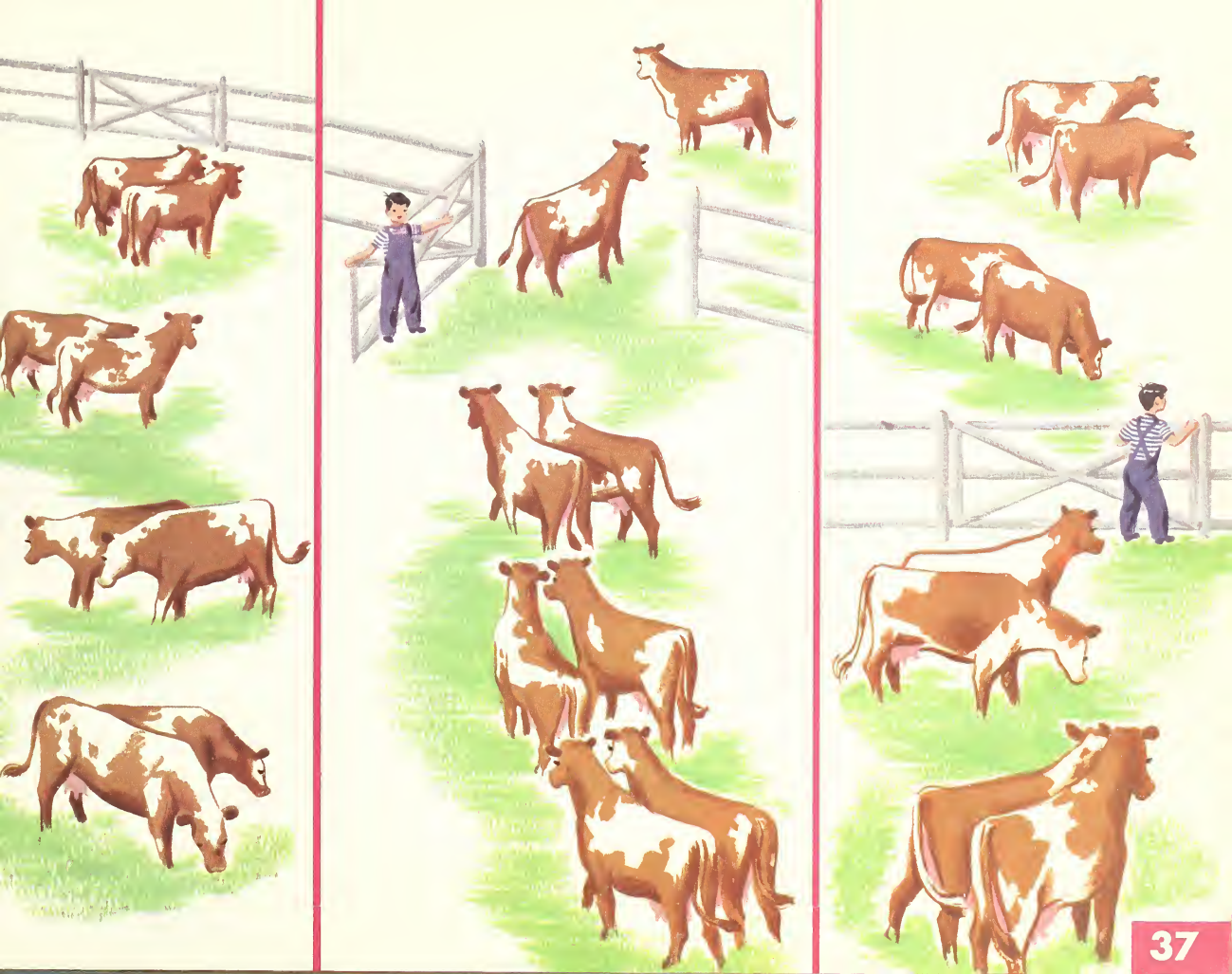

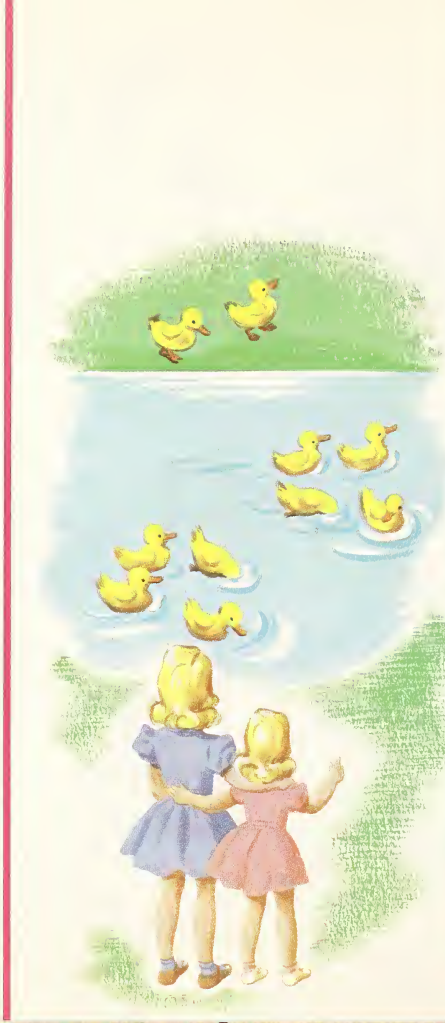

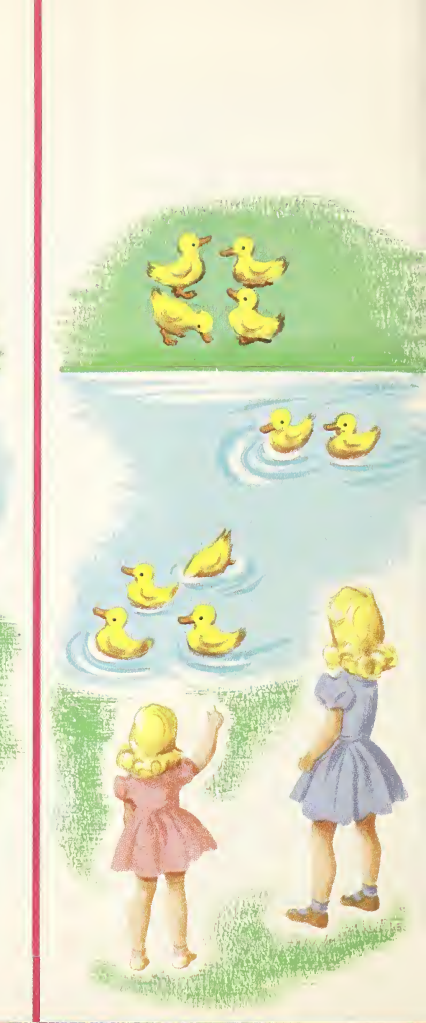

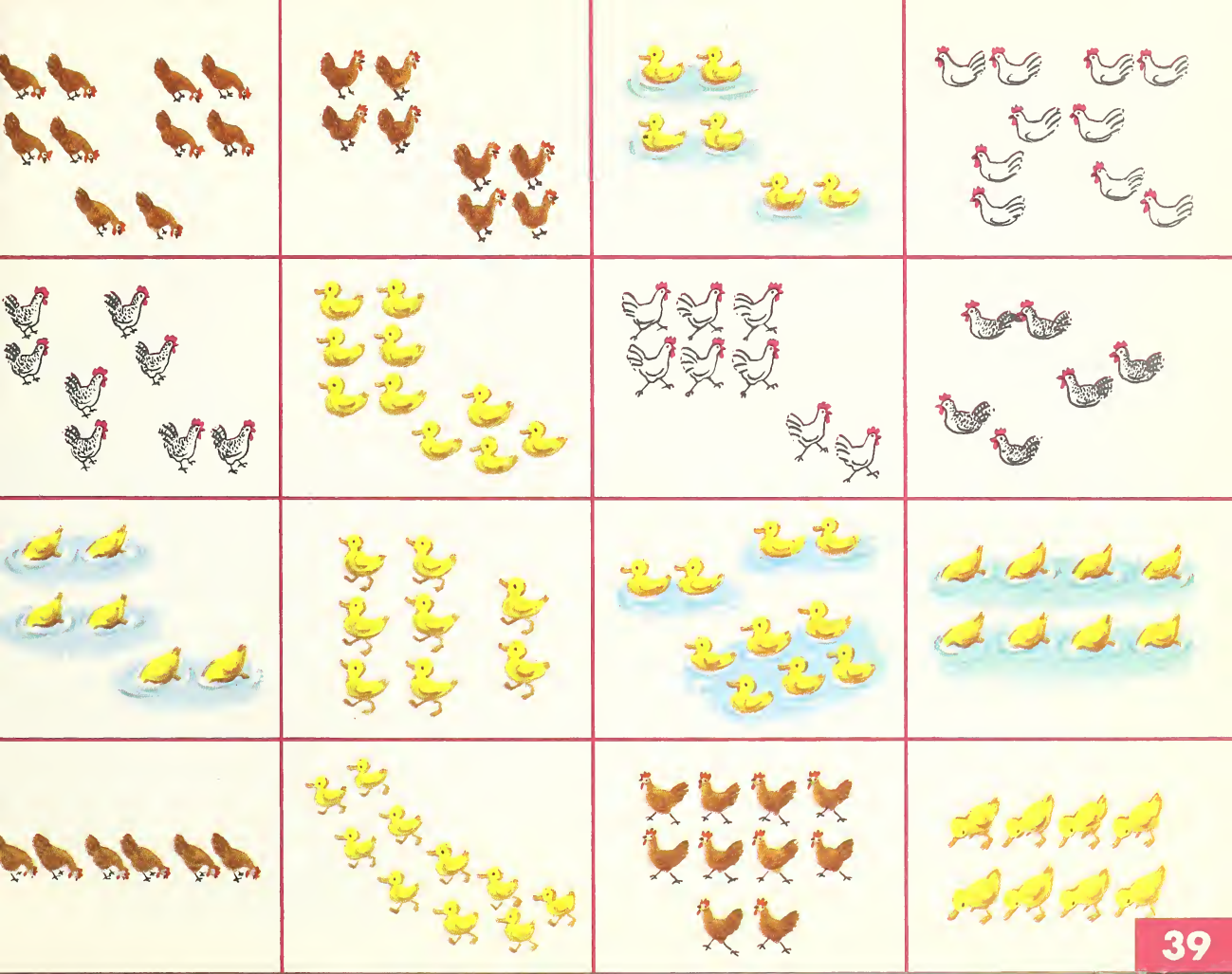

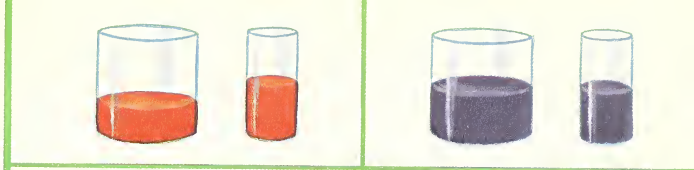

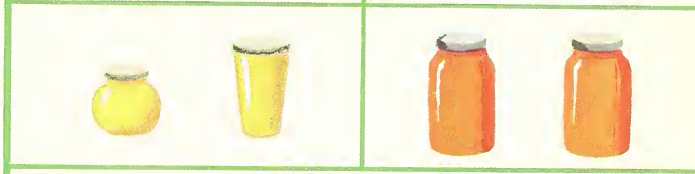

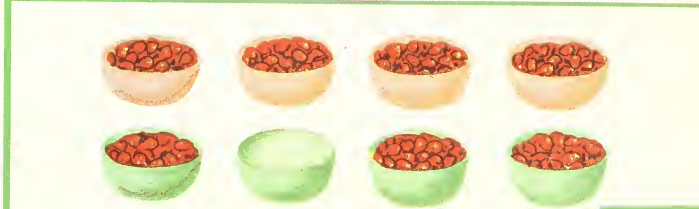

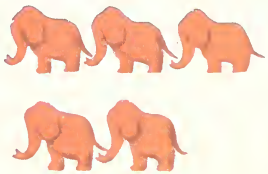

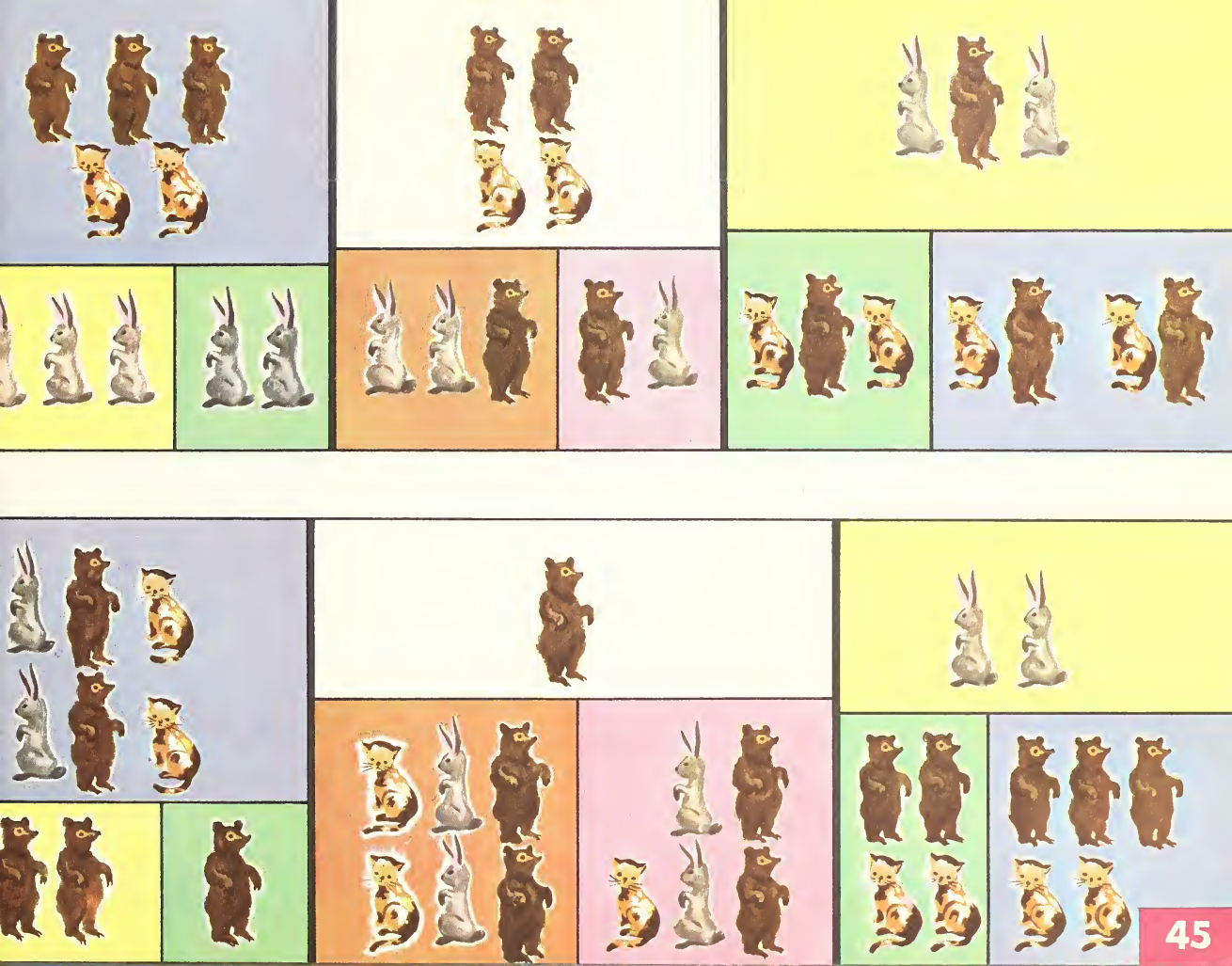

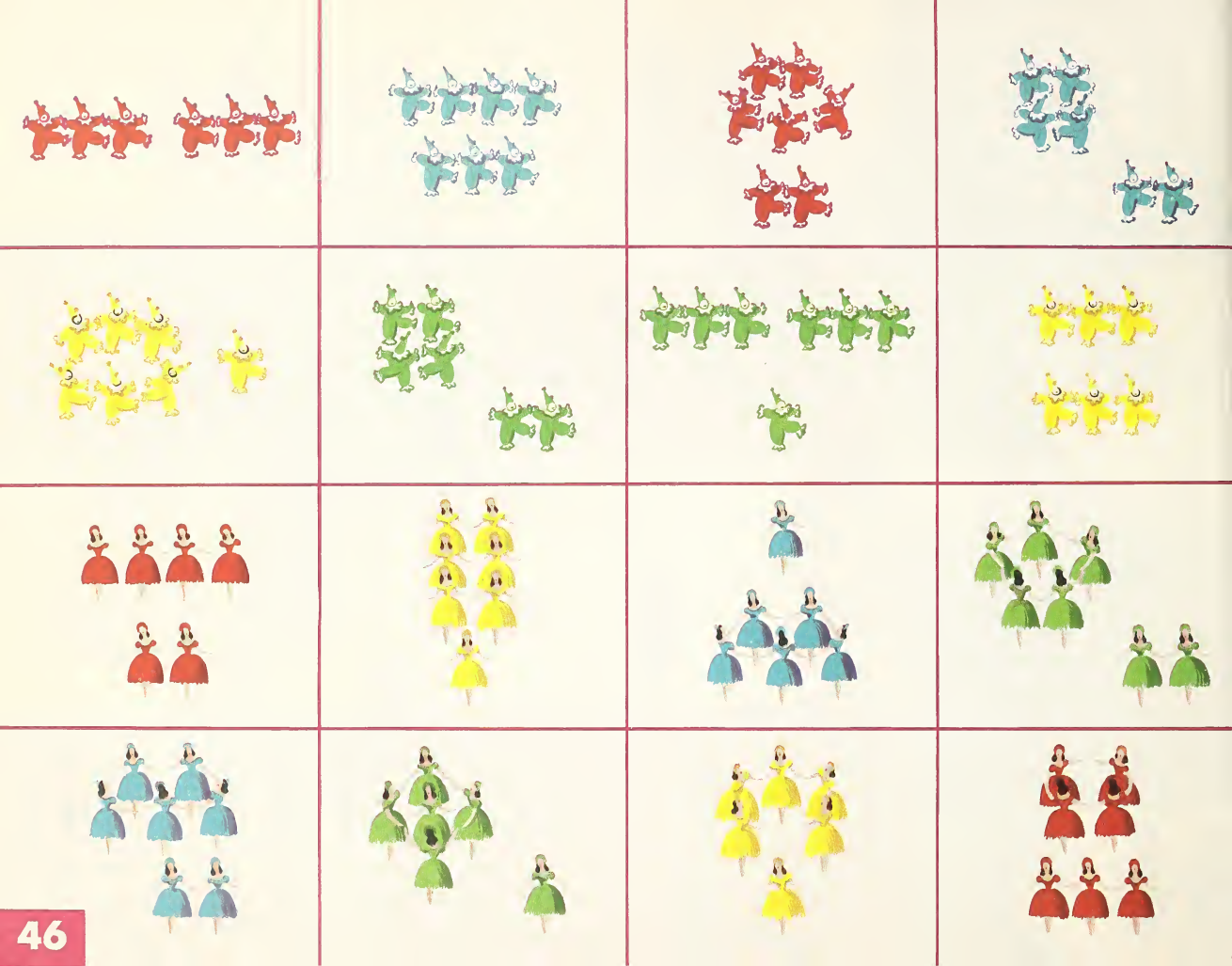

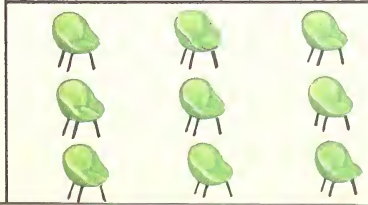

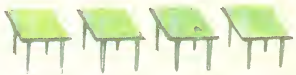

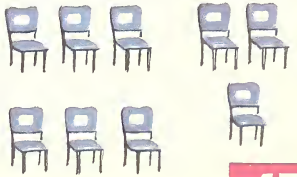

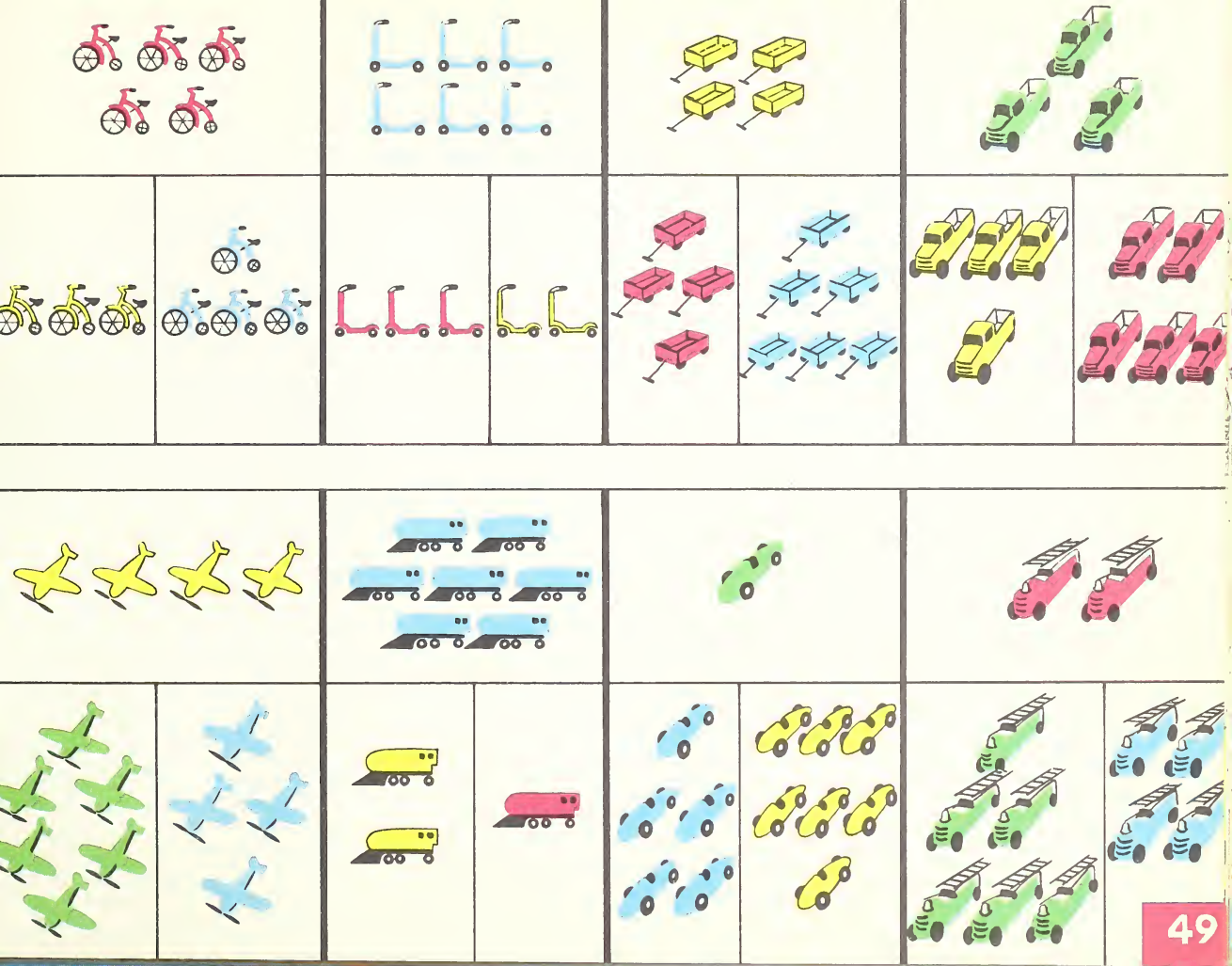

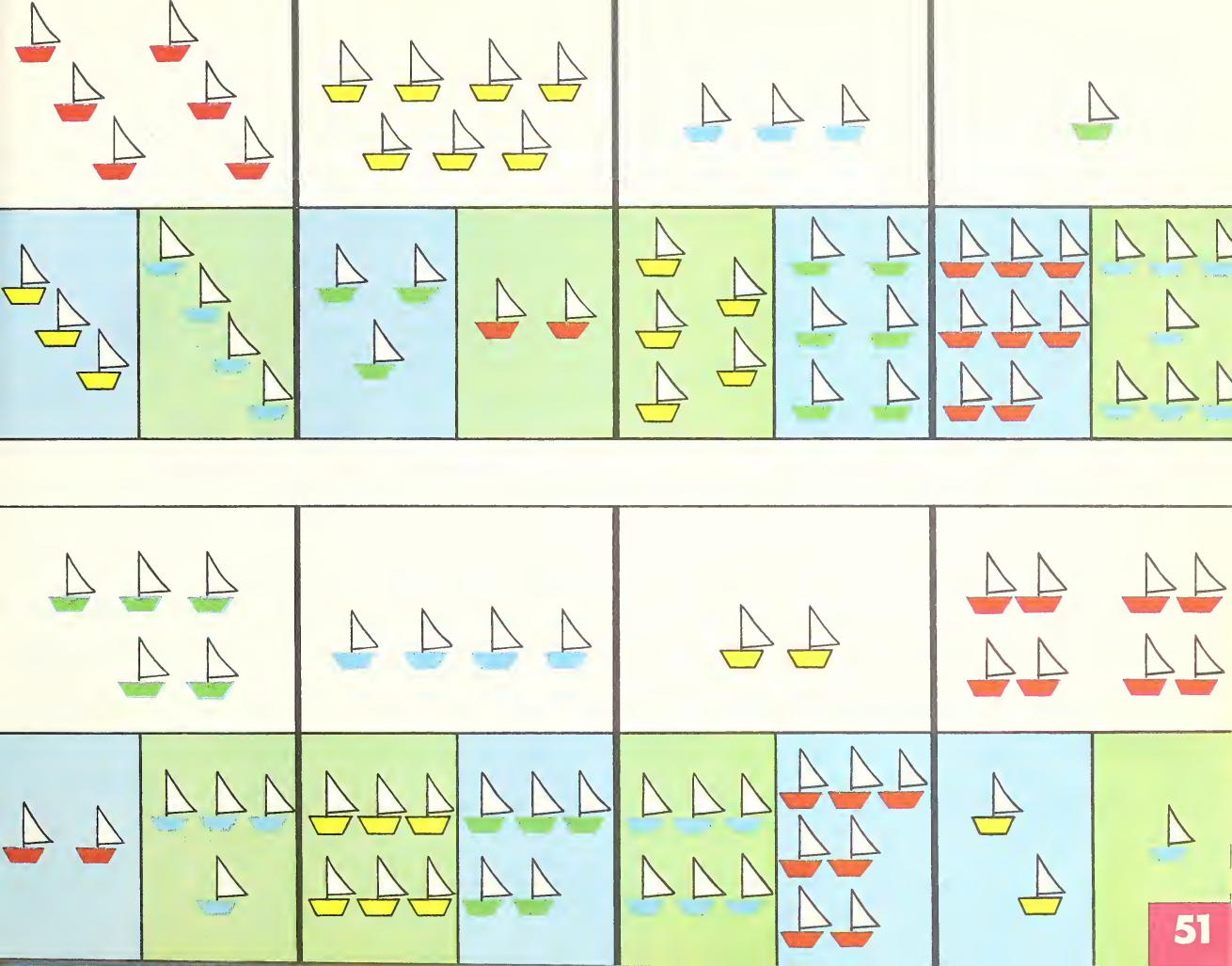

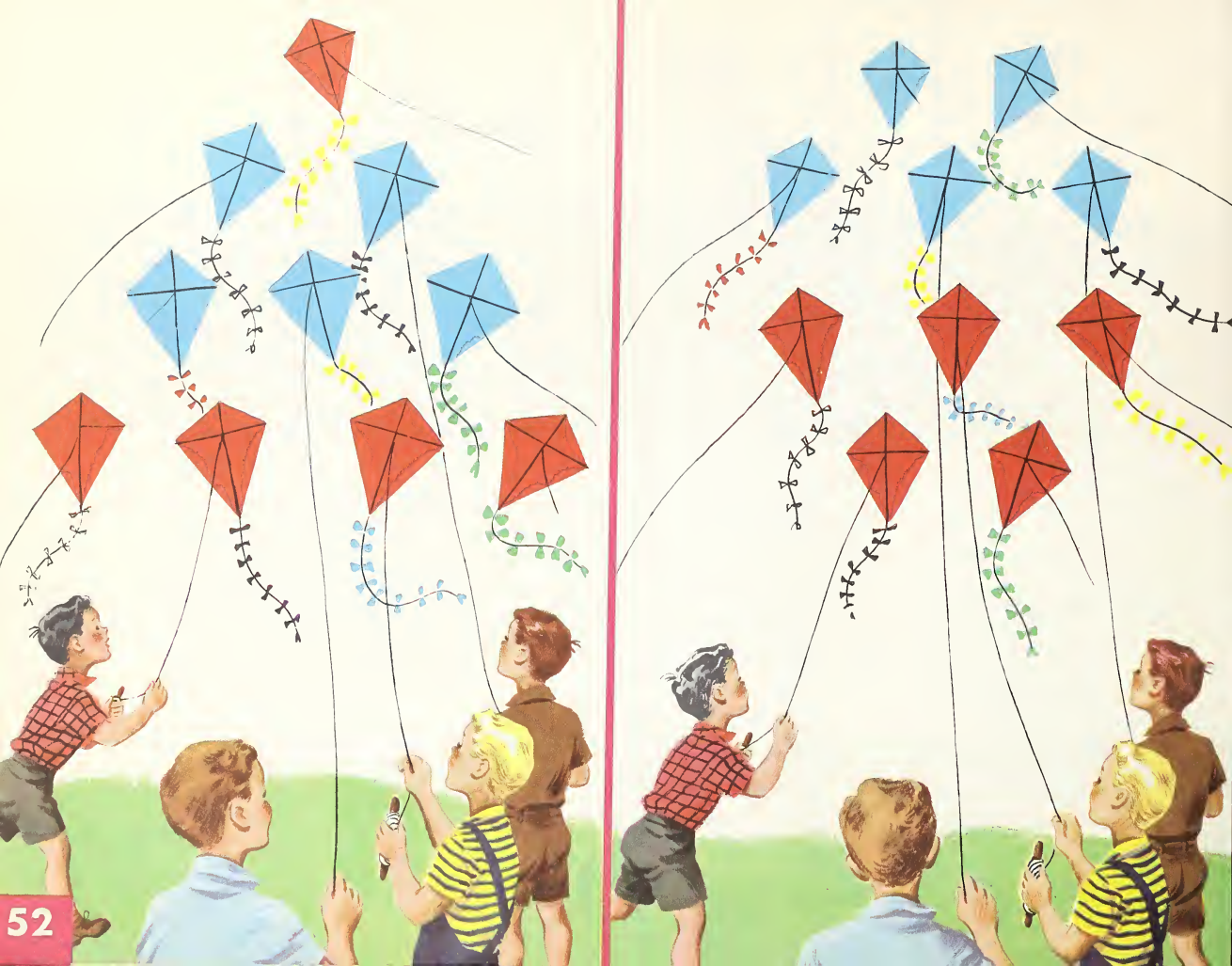

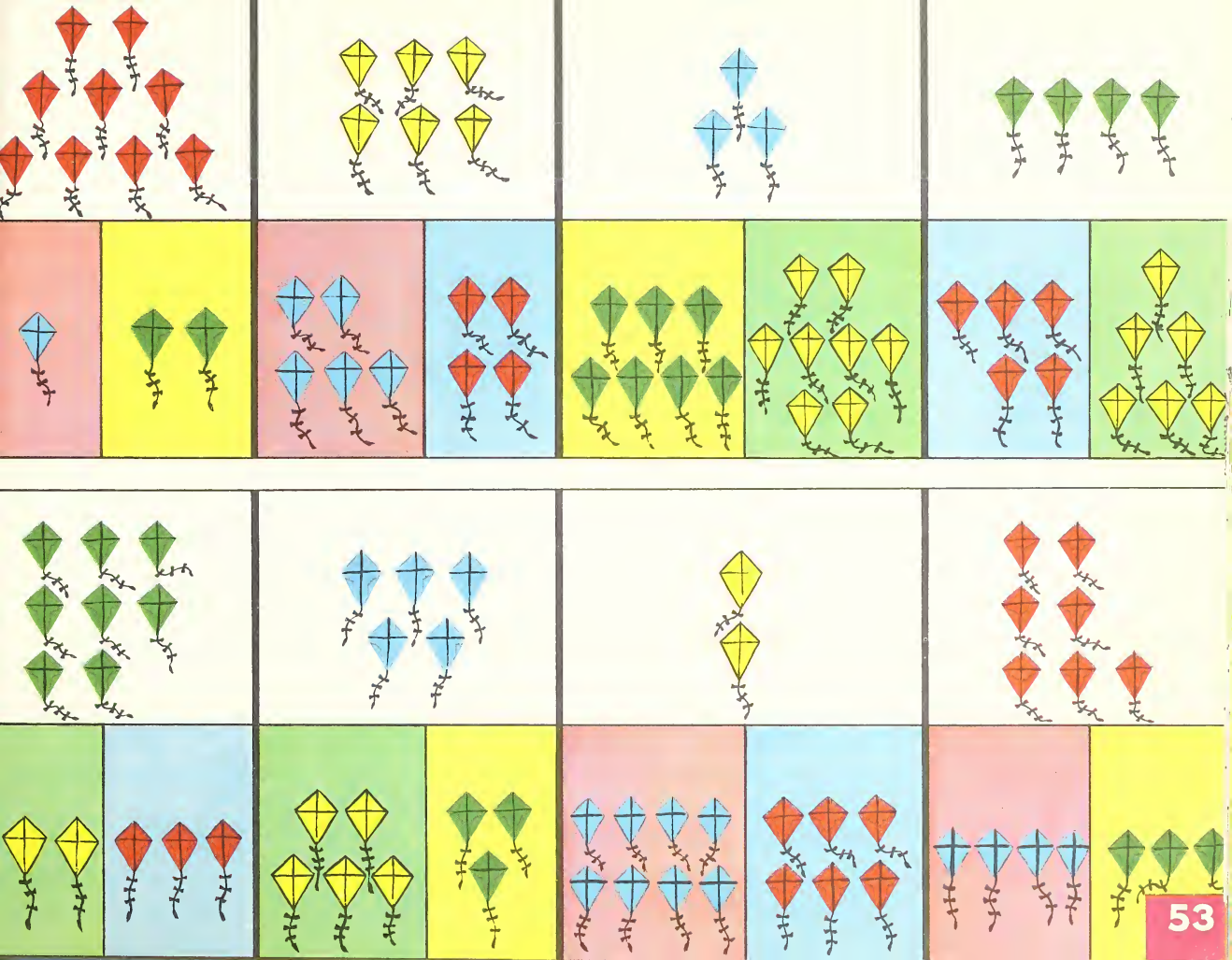

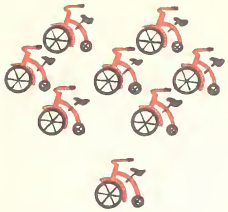


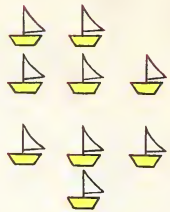
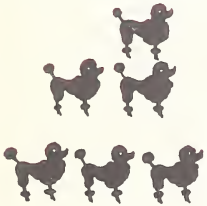
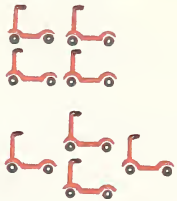
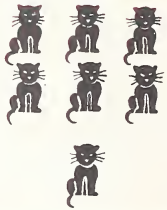


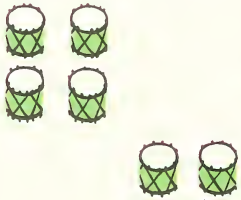
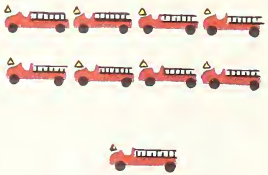


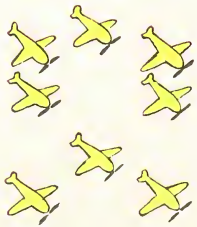

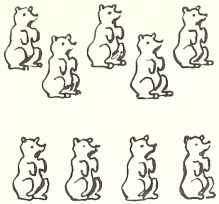
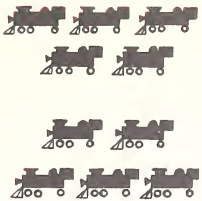

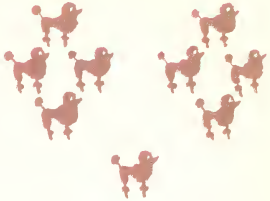

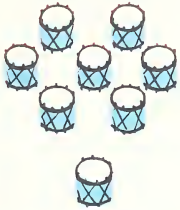
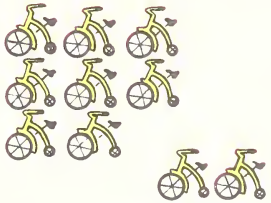
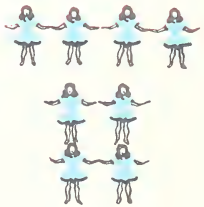
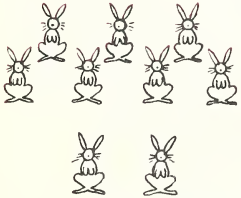
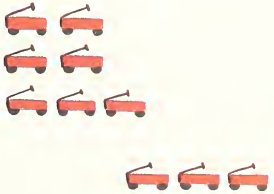

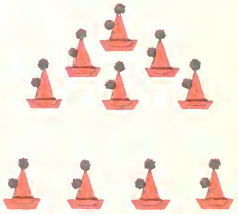
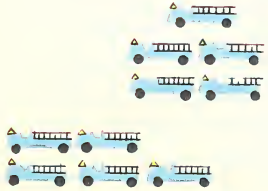
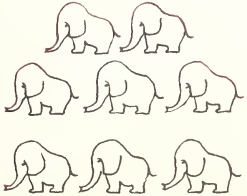
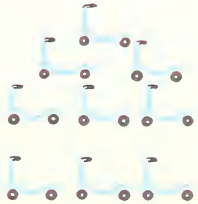


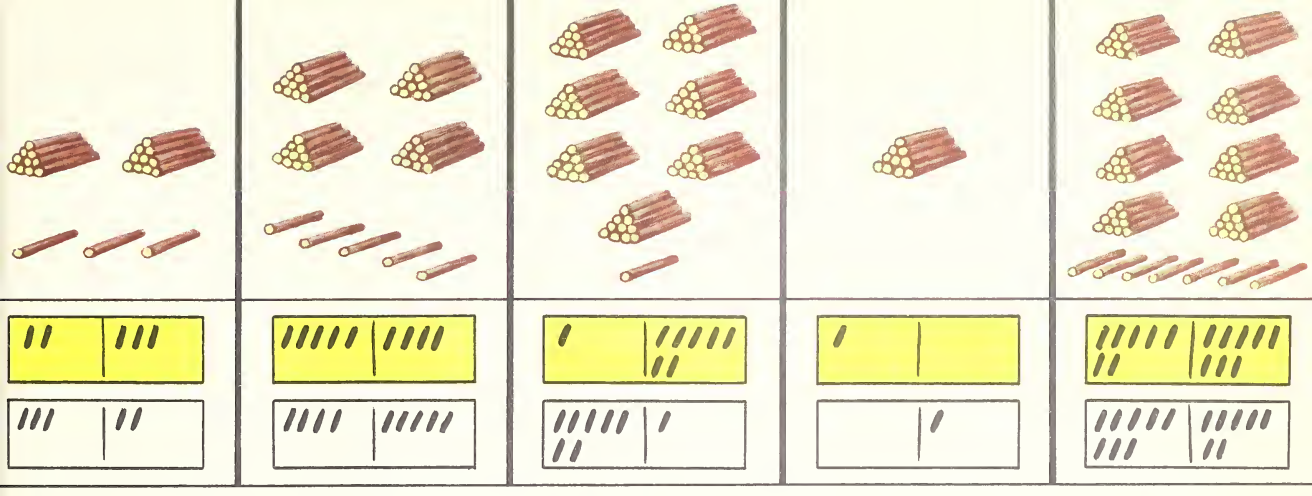

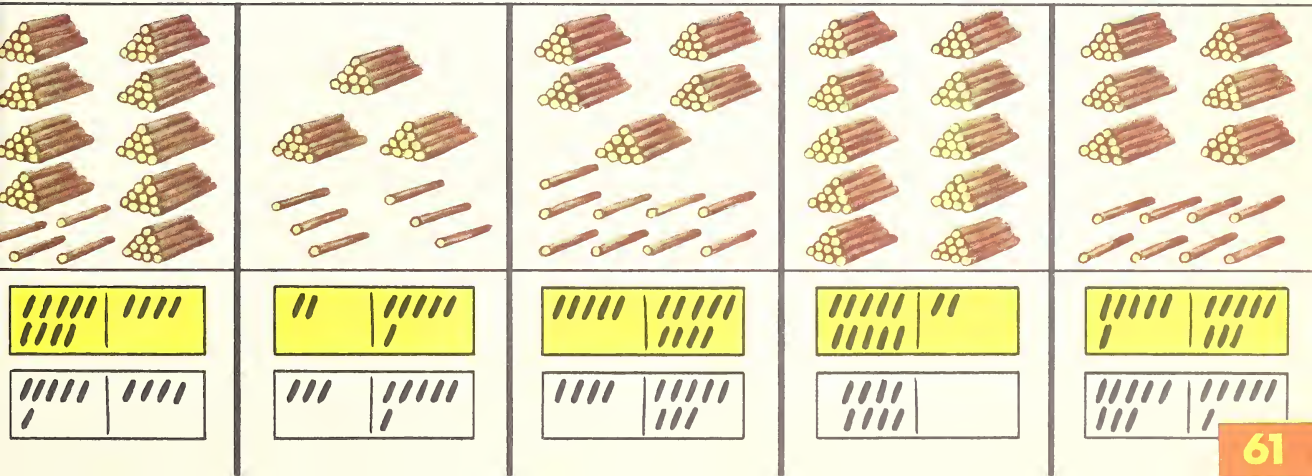


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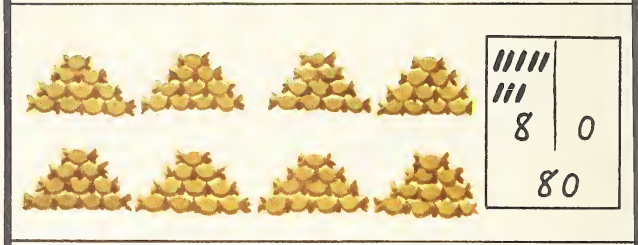
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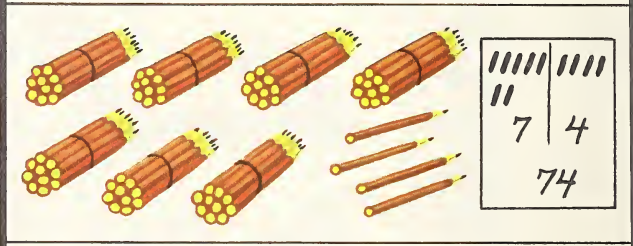
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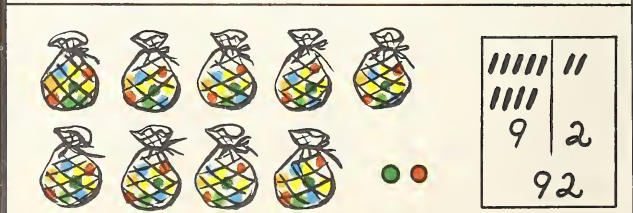
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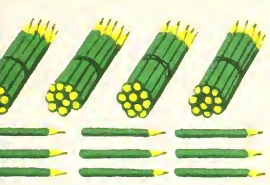

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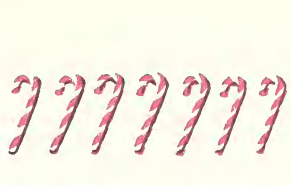

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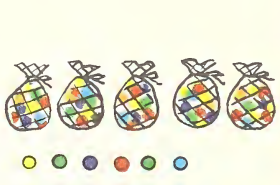

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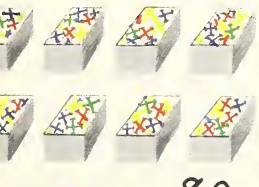

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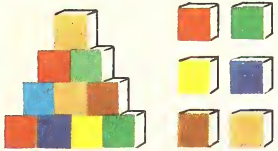

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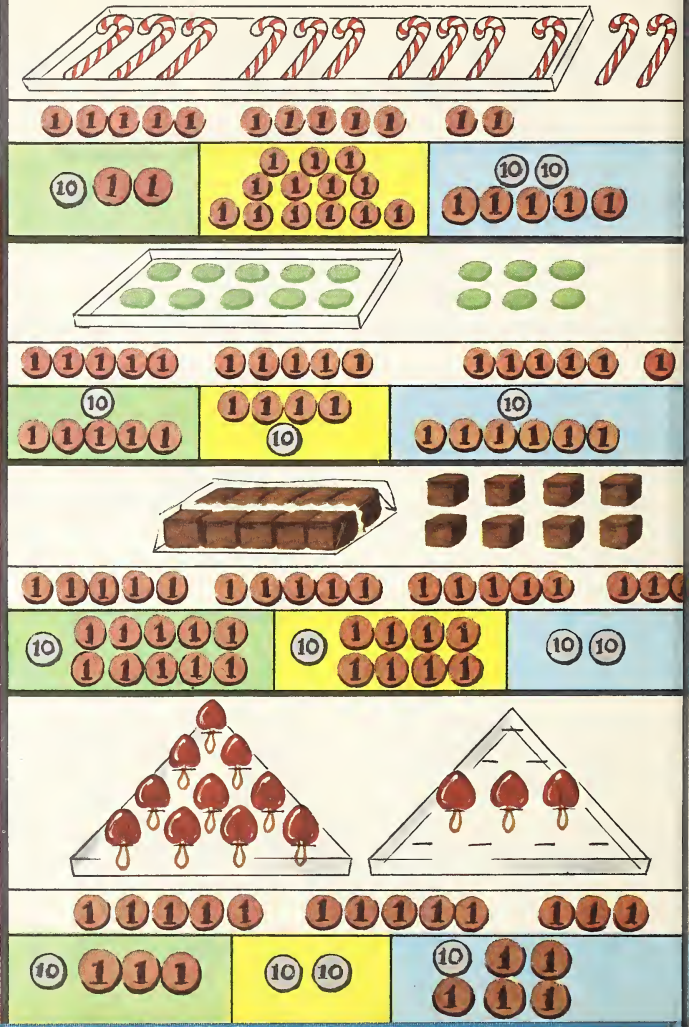

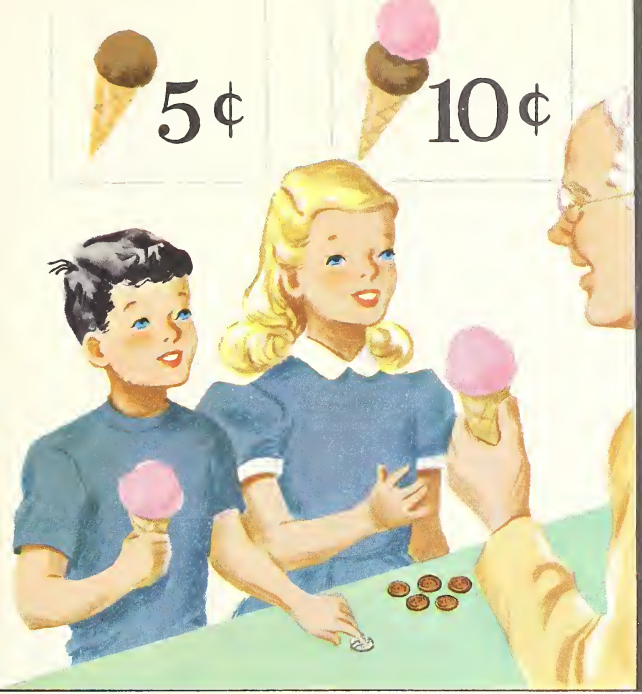
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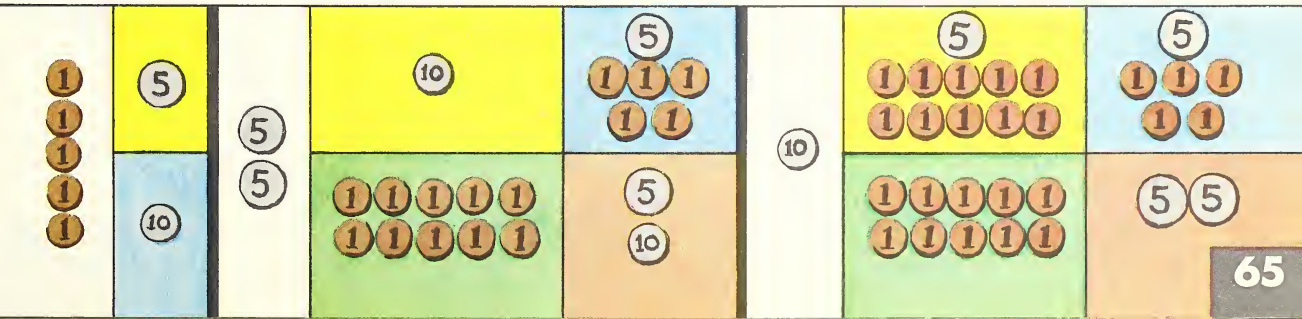
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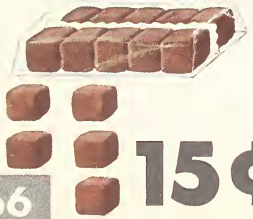

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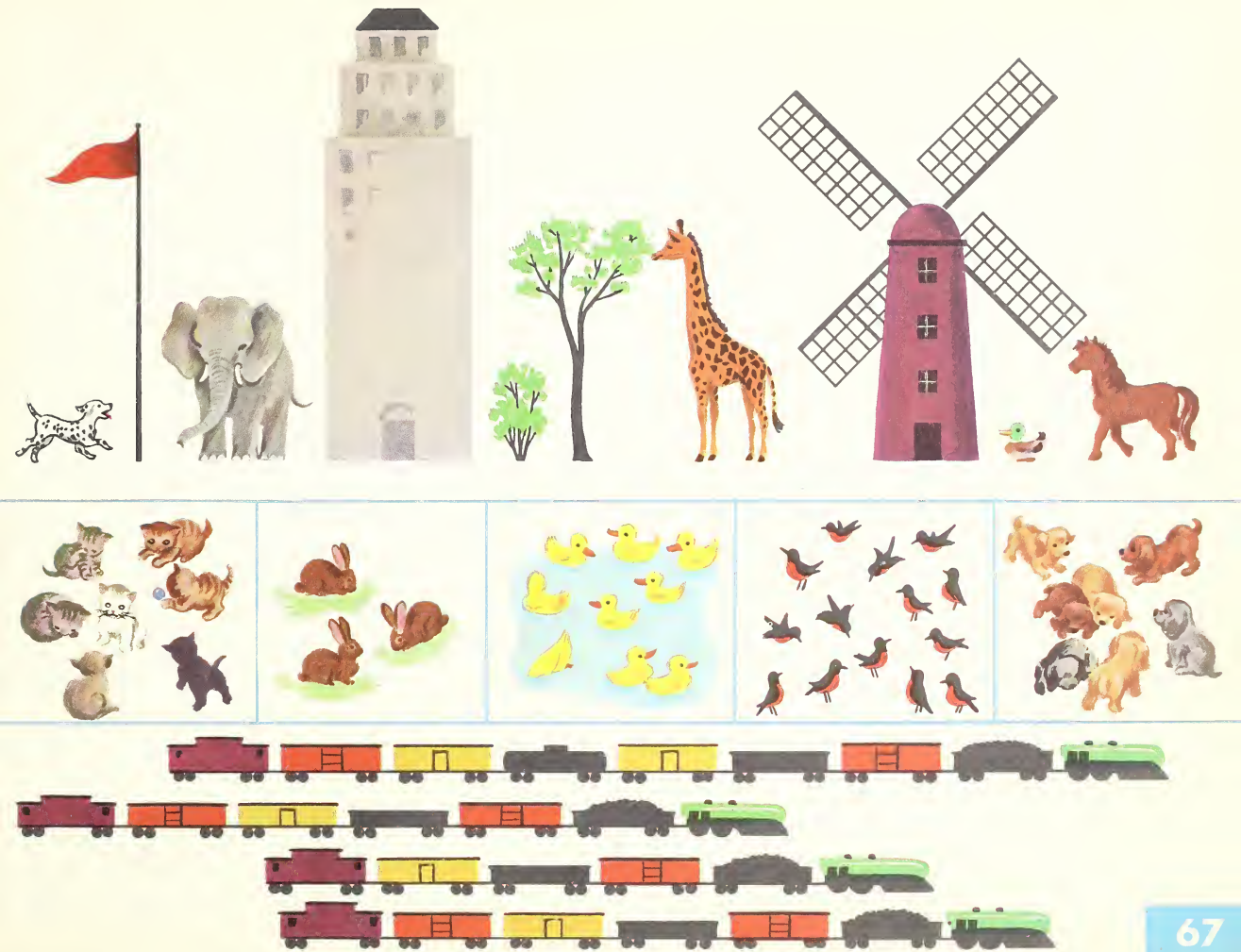

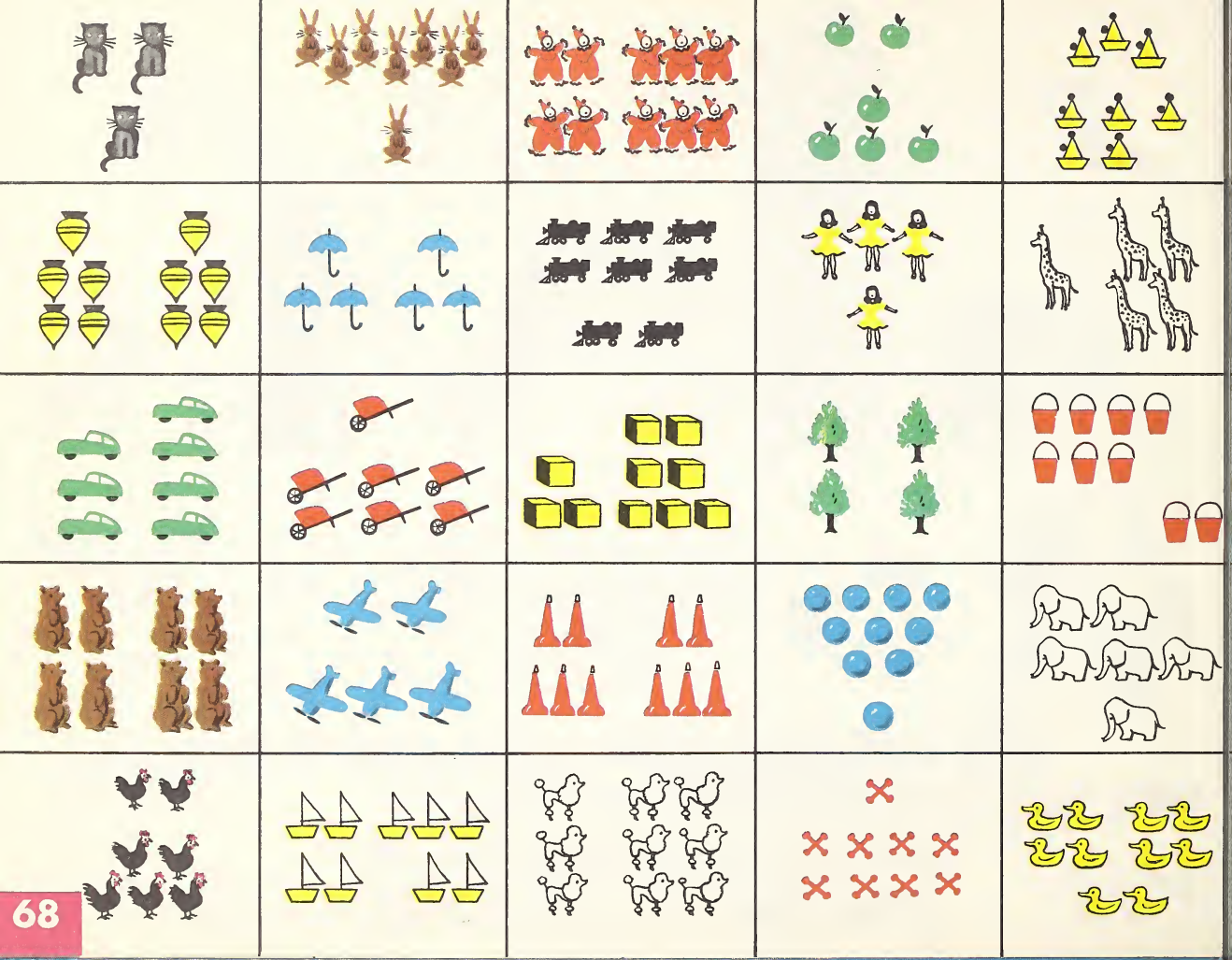

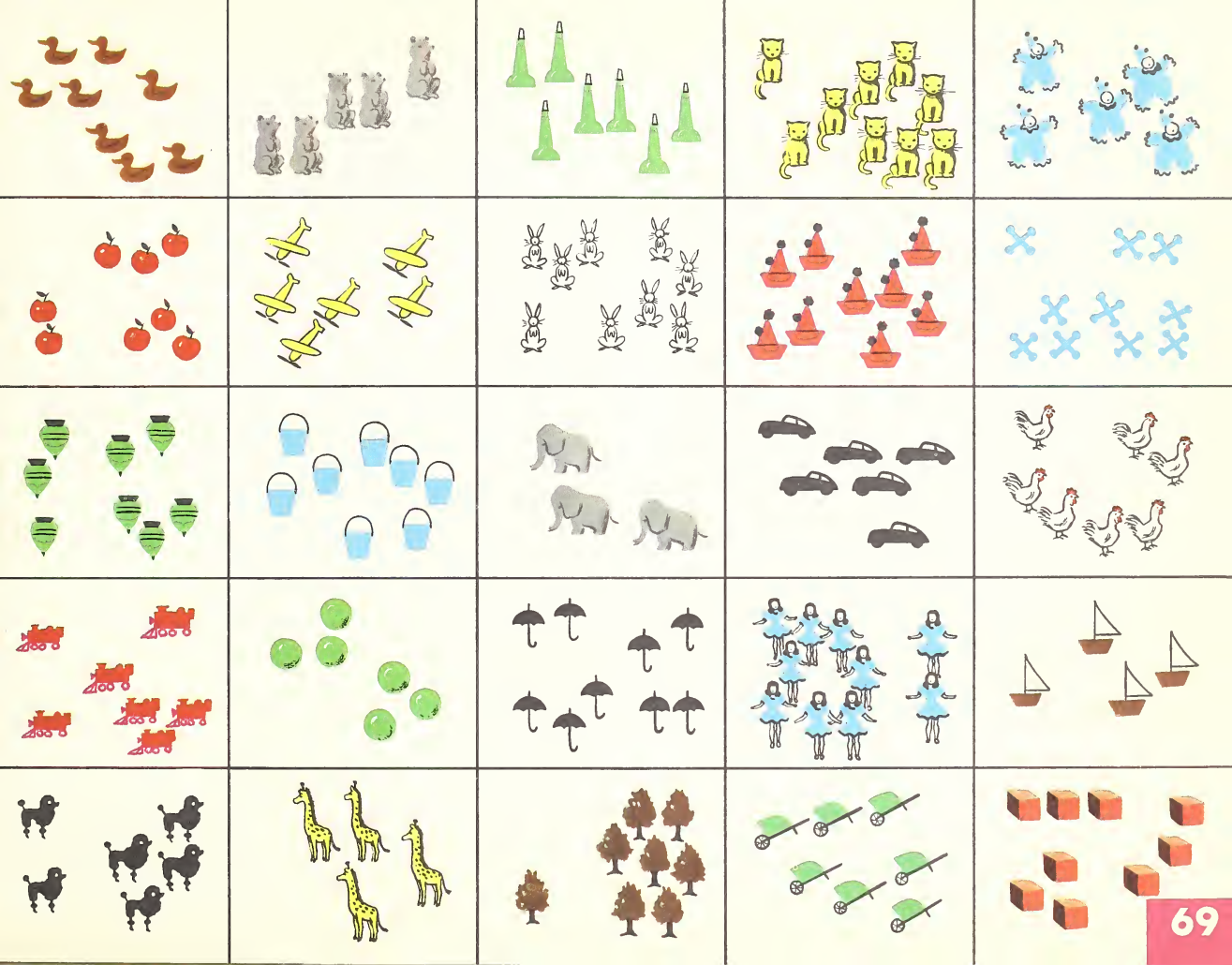

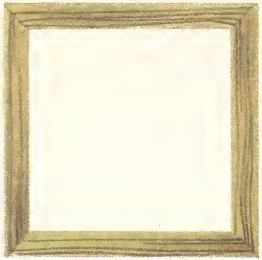

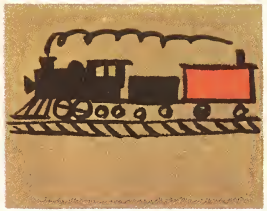

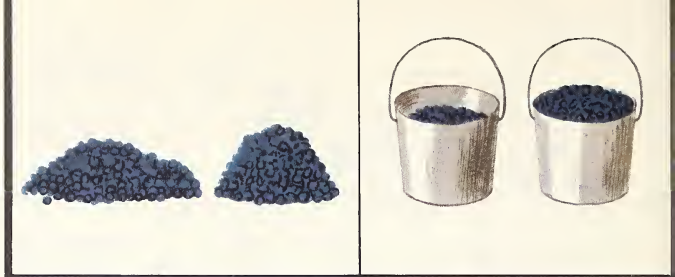

Purpose and Scope of This Book

Numbers We See is designed to help teachers develap a rich and interesting number-readiness pragram in Grade 1. Used either with the *Number Readiness Chart*,[1] the *Arithmetic Readiness Cards*,[2] *Our Number Warkshap 1*,[3] ar independently, it leads to a systematic develapment af number cancepts by nan-farmal, concrete methads. Carefully planned pictures are used ta intraduce each new cancept in a natural setting at the child's level of interest and understanding. The number ideas in each picture can be made clear through graup discussian and a variety af manipulative activities based an the picture. Detailed plans far using the baak and many suggested activities will be faund in the Teacher's Edition beginning an page 73. *Numbers We See* develops five basic phases af number readiness.

1 *Carrespandence:* relating ane object ta ane abject, ane-ta-twa, twa-to-ane, ane-ta-ten, recagnizing graups af twa, three, and faur abjects. (Pages devated ta this phase are indicated by *blue* blacks in the baak.)

2 *Number relatianships:* finding how graups af abjects (up ta ten) can be built up fram the small groups and haw these larger graups can be braken up inta variaus arrangements af the smaller graups. (Indicated by *red.*)

3 *Number system:* grauping by tens as well as by tens in cambinatian with anes, leading up ta an appreciatian af the written natatian of our number system. (Indicated by *arange.*)

4 *Measurement:* develaping the cancept af a unit and standard unit; counting the number of times the unit is used. (Indicated by *green.*)

5 *Maney:* recagnizing the smaller coins; knawing the relatianships between them and what they will buy. (Indicated by *gray.*)

1 *Number Readiness Chart*, by Anita Riess and Maurice L. Hartung. Scatt, Faresman and Campany.
2 *Arithmetic Readiness Cards Set 1: Grouping; Set 2: Number System*, by Maurice L. Hartung, Henry Van Engen, and Helen Palmer. Scatt, Faresman and Campany.
3 *Our Number Warkshap 1*, by Maurice L. Hartung, Henry Van Engen, and Catharine Mahaney. Scatt, Faresman and Campany.

Concept Chart

Page	Concepts and Skills	Picture Sequence
3	This page introduces the family and the book to the children.	Father, Mother, Carol, Don, and Nancy at home in their living room
4	Informal reactions to quantitative ideas of many and few without counting	Night scene showing the community in which the family lives
5	Reactions to quantitative ideas of many and few in simple comparisons	Scenes from the neighborhood in which the family lives
6	Simple pairing; matching one series of objects to another; continued on page 7	The street on which the family lives, showing its house and four others
7	Simple pairing; emphasis on ideas of enough, not enough, all	Continuation of page 6
8	Simple pairing; emphasis on ideas of too few, too many, more than enough	Carol has a party including herself and four of her friends.
9	Simple pairing; emphasis on ideas of as many as, not as many as, more, fewer	Carol and her mother straighten up the house after the party.
10	Informal reactions to standards that arise from use or need	The family picks apples from the tree in the back yard.
11	Immediate recognition of model groups of two and three	Toys and objects that are familiar to the children
12	Differentiating between groups of two and three objects	Don plays marbles with one of his friends.
13	Active groupings by two and three according to position and other characteristics	Carol and Don with friends at the playground
14	Recognition of groups of four and differentioting between two and four	The family watches the circus parade.
15	Differentiating between right and wrong with respect to groups of two and three	A scene from the circus which the family attends
16	Positional meaning of each of the numbers 1 to 5; emphasis on 1, 3 and 5	The children buy tickets for the train ride at the circus.
17	Positional meaning of 1 to 5; emphasis on 2 and 4; recognition of symbols 1 to 5	The children board the train.
18	Positional meaning of 1 to 5; emphasis on location in two directions	Baggage rack for checking children's toys during train rides
19	Positional meaning of 1 to 5; recognition of groups of two, three, and four	Toys belonging to Carol, Don, Nancy, and their friends
20	Formation of 6 by adding a group of 2 to 2,2, or 4; 6 as 3,3; 6 as 2,2,2	Don and Carol with friends at the school playground
21	Formation of 8 by adding a group of 2 to a group of 6; 8 as 4,4; 8 as 2,2,2,2	Carol plays a game with friends at school.
22	Formation of 10 by adding a group of 2 to a group of 8; 10 as 5,5; 10 as 2,2,2,2,2	Lunch time at school

Page	Concepts and Skills	Picture Sequence
23	Recognition of groups that make up groups of 6, 8, and 10; combining; separating	Toy automobiles belonging to the children
24	Formation of 5 by assembling 2's and 1 extra; 5 as 2,2,1; as 3,2; as 4,1	Don and his friends play a game of "hide and seek."
25	Formation of 7 by assembling 2's and 1 extra; 7 as 2,2,2,1; as 3,3,1; as 6,1	Don and his friends have a "wheelbarrow" race.
26	Formation of 9 by assembling 2's and 1 extra; 9 as 2,2,2,2,1; as 4,4,1; as 8,1	Don and his friends have a "relay" race.
27	Recognition of 5,6,7,8,9, and 10 by groupings previously developed	Toys and objects familiar to the children
28	The unit in measurement; using measuring model once for each object	Don takes part in a measuring activity at school.
29	Using more than one copy of a measuring model to measure each object	Don and his classmates use measurement in planning a blackboard decoration.
30	Using one measuring model repeatedly in situations that measure exactly	Don measures off the distance for a game of ring toss.
31	Using one measuring model repeatedly in situations that do not measure exactly	Don, Carol, and two friends play beanbag.
32	Positional meaning of 6 to 10; recognition of number symbols 6 to 10	Scene from the children's pet show at school
33	Positional meaning of 6 to 10; emphasis on location in two directions	Parents gather for the pet show.
34	Positional meaning of 6 to 10; review of measurement and simple pairing	Carol, Don, Nancy, and a friend at play
35	Distributing 1 thing to 2 things; 1-to-2 correspondence	Toy shop at which the children buy their toys
36	Rearranging groups of 6 as 2,2,2 by partial combining; 6 as 4,2; 6 as 2,4	The children visit the farm. Carol feeds her pet chickens.
37	Rearranging groups of 8 as 2,2,2,2 by partial combining; 8 as 6,2; 2,6; 4,4	The children visit the farm. Don helps take care of the cows.
38	Rearranging groups of 10 as 2,2,2,2,2; 10 as 8,2; as 2,8; as 6,4; as 4,6	The children visit the farm. Carol and Nancy watch the ducks.
39	Recognition of 6, 8, and 10 as made up of arrangements of groups of 2	Arrangements of ducks and chickens
40	Using more than one copy of a measuring model to measure volume or capacity	Carol and Don pick berries at the farm.
41	Using one measuring model repeatedly to measure volume or capacity	Continuation of page 40
42	Meaning of 6 as made up of the groups 1,2,3 and combined to 3,3; 4,2; 5,1	The children watch a puppet show at a school program.
43	Assembling the correct component groups to make 6	Animals and objects used in the puppet show
44	Meaning of 7 as made up of the groups 2,3,2 and combined to 4,3; 5,2	The children perform at the school program.
45	Assembling the correct component groups to make 7, including 6,1	Animals imitated by children in their performances at the school program
46	Recognition of 6 and 7 by their component groups	Dances and arrangements suggested by the school program

Page	Concepts and Skills	Picture Sequence
47	Recognition of 9 by adding a group of 3 to two groups of 3; 9 as 6,3; 9 as 3,3,3	The band at the school program
48	Meaning of 8 as made up of the groups 2,3,3 and combined to 6,2; 5,3	Don and his friends at play. They race with their tricycles.
49	Assembling the correct component groups to make 8, including 4,4; 7,1	Toys belonging to Don and his friends
50	Meaning of 9 as made up of the groups 2,3,4 and combined to 5,4; 6,3; 7,2	Don and his friends at play. They have a boat race.
51	Assembling the correct component groups to make 9, including 8,1	Arrangements suggested by the boat race
52	Meaning of 10 as made up of the groups 1,2,3,4; 10 as 2,8; 4,6; 5,5; 3,7; 9,1	Don and his friends at play. They fly their kites.
53	Assembling the correct component groups to make 10	Arrangements suggested by the kites
54	Recognition of 6, 7, 8, and 9 by their component groups	Toys of interest to the children
55	Recognition of 8, 9, and 10 by their component groups	Toys of interest to the children
56	Establishing decades by counting with emphasis on decade names; 20, 30	Don builds a village of log houses with toy logs.
57	Establishing decades by counting with emphasis on decade names ; 40, 50	Continuation of page 56
58	Establishing decades by counting with emphasis on decade names; 60, 70, 80	Continuation of page 57
59	Establishing decades by counting with emphasis on decade names; 90, 100	Continuation of page 58
60	Meaning of numbers within the decades; distinguishing between tens and ones	Don ond a friend lay out logs for more houses.
61	Meaning of numbers within the decades; distinguishing between tens and ones	Continuation of page 60
62	Naming and writing numbers from 11 to 100; emphasis on tens and ones	Carol and a friend have a play store.
63	Naming and writing numbers from 11 to 100; emphasis on tens and ones	Continuation of page 62
64	Establishing relationship between 10 cents and 1 dime	Carol and Don buy candy for themselves and their friends.
65	Establishing relationship between 5 cents and 1 nickel; 2 nickels and 1 dime	Carol, Don, and their friends buy ice-cream cones.
66	Identifying correct amounts of money to purchase items with prices indicated	Things that interested Carol and Don when they went to the store
67	Reacting to crude meosurements and positional meaning of 1 to 10; inventory	Toys and pets of interest to the children
68	Recognition of the numbers 3 to 10 by their component groups; inventory	Toys and pets of interest to the children
69	Recognition of the numbers 3 to 10 by their component groups; inventory	Continuation of page 68
70	Applying concept of a standard in measurement; inventory	Items of interest to children at home and at school


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